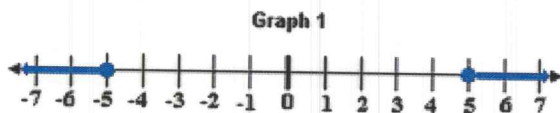


Name: _____

This packet does not include 1.6, 1.7 & 1.8 since we covered these sections so recently.

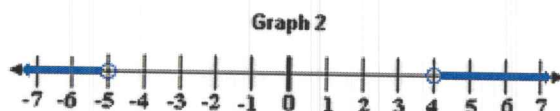
1.1 INTERVAL NOTATION

1) Write the domain of each graph in both **inequality** and **interval** notation.



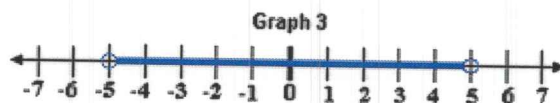
Inequality:

Interval:



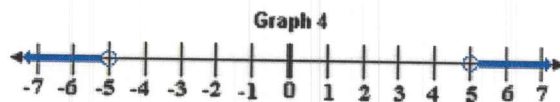
Inequality:

Interval:



Inequality:

Interval:

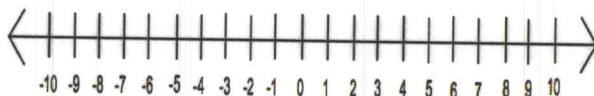


Inequality:

Interval:

2) Graph each interval on a number line.

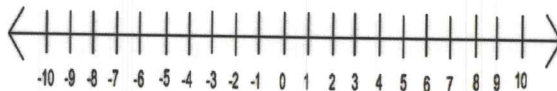
a. $[-3, \infty)$



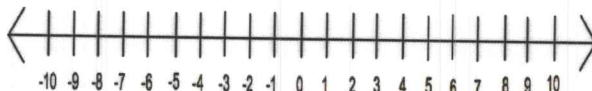
b. $(-4, 5]$



c. $(-\infty, 2] \cup (2, \infty)$



d. $(-10, -1) \cup [5, \infty)$



3) Write each inequality in interval notation.

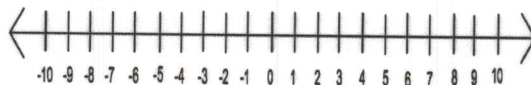
a. $-9 < x \leq 6$

b. $-5 \leq x < 4$ or $x > 8$

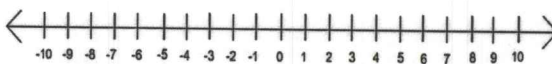
c. $x < -5$ or $x \geq 0$

4) Solve each inequality. Graph the solution set on a number line, AND write the solution in interval notation.

a. $3x + 11 < 5$



b. $5 - \frac{1}{3}n \leq 6$



e. $-8 \leq \frac{3}{4}p - 2 < 10$



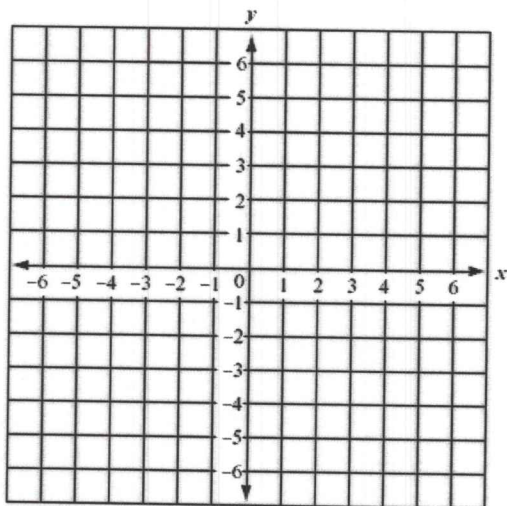
f. $3x - 8 > 1$ or $2x + 9 < -3$



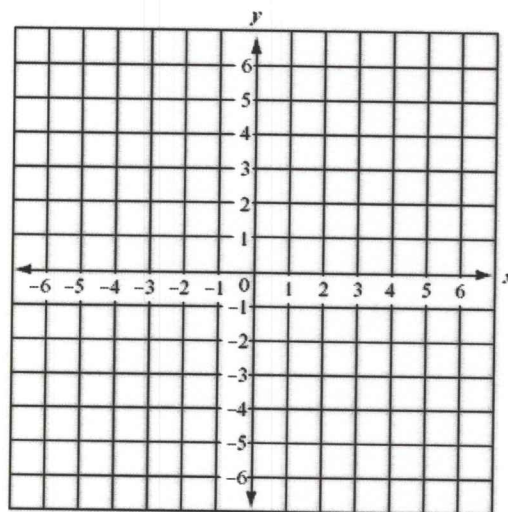
1.2 LINEAR FUNCTIONS

- Suppose a cab drive charges a passenger an initial meter fee of \$2.50 just for getting in the cab. Then, she charges \$0.25 per mile after that. This is a linear function in which the cost of the ride (cab fare) is a function of distance (the number of miles that are driven). Let x represent the number of miles driven by the cab. Let C represent the cost of cab fare. Write an equation for the cost of cab fare as a function of the number of miles driven.

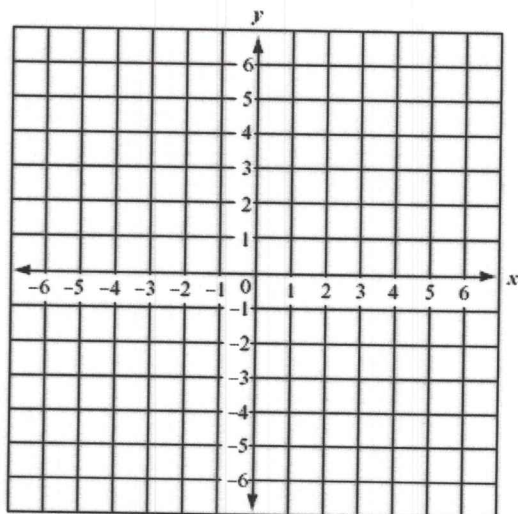
2. Graph the line with equation $y = \frac{2}{3}x + 1$



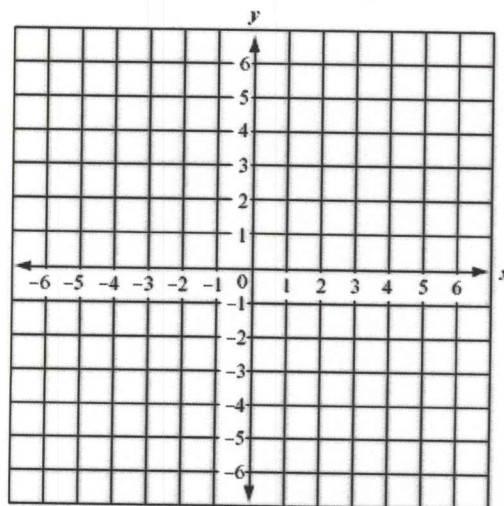
3. Graph the line with equation $y = 3$



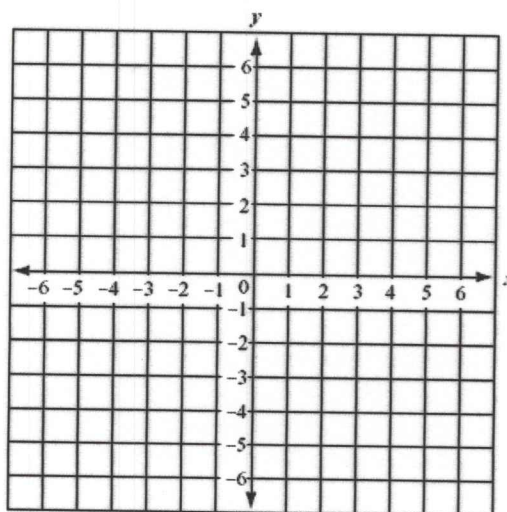
4. Graph the line with equation $x = 4$



5. Graph the line with eqtn $y = -\frac{1}{2}x$

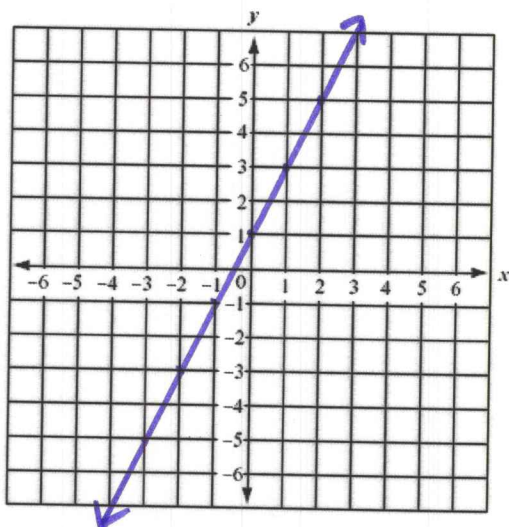


6. Graph $4x - 3y = 12$ which is in standard form

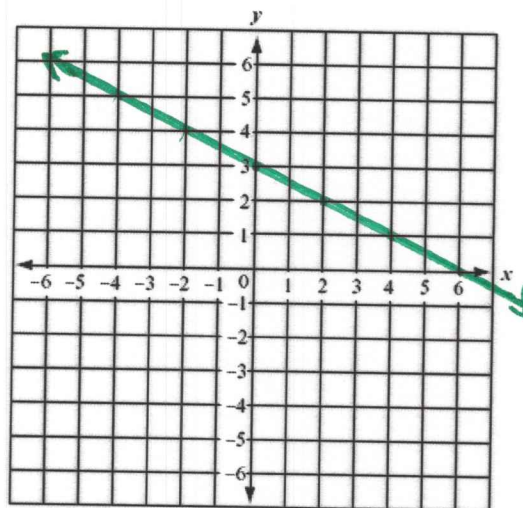


Given the lines shown, write an equation in slope-intercept form first then convert the equation to standard form.

6.

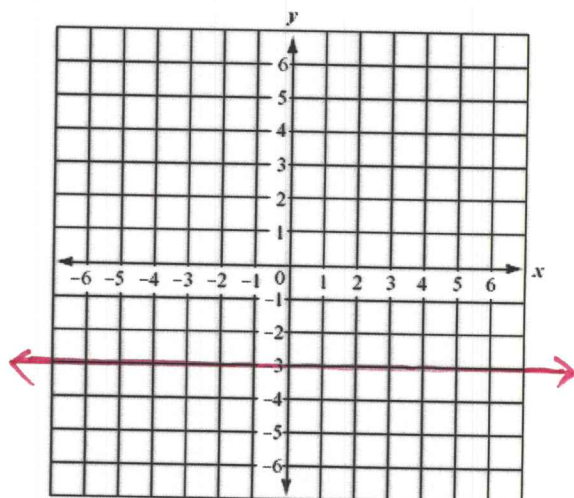


8.

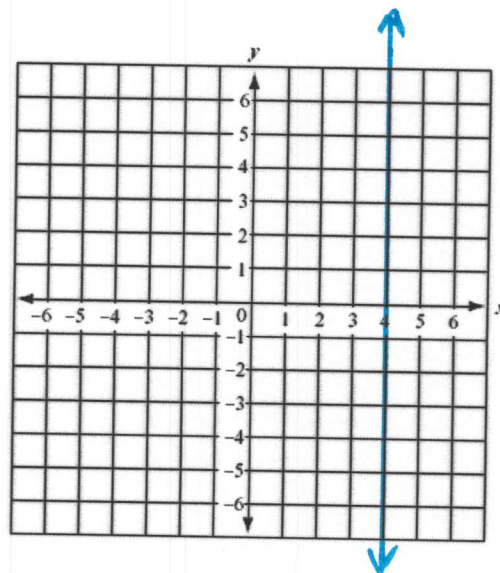


Given each line shown, write an equation in point-slope form first then convert the equation to slope-intercept.

9.



10.



11. Given a line containing the points $(-3, 3)$ and $(9, 7)$. Find an equation of the line in slope-intercept form. Convert your equation to standard form.
12. Given a line containing the points $(4, 7)$ and $(-1, 7)$. Find an equation of the line.
13. Given a line containing the points $(3, 5)$ and $(3, 1)$. Find an equation of the line.
14. The two given equations represent lines. Are the lines parallel or Perpendicular or neither? Explain briefly why. $x + 2y = 5$ & $2x - y = 4$
15. Line A has equation $y = 3x + 1$. Line B contains the point $(-1, -8)$ and is parallel to line A. Determine an equation for line B.
16. Line A has equation $y = \frac{2}{5}x - 6$. Line B contains the point $(4, -9)$ and is perpendicular to line A. Determine an equation for line B.

1.3 Bases & Exponents

Simplify each expression (do not leave any negative exponents):

1. $\sqrt[3]{64} =$

2. $\sqrt[6]{64} =$

3. $9^{\frac{3}{2}} =$

$$4. \quad 27^{\frac{4}{3}} =$$

$$5. \quad \frac{7^5}{7^7} =$$

$$6. \quad \frac{x^{14}}{x^6} =$$

$$7. \quad \frac{35x^{10}y}{5x^6y^3} =$$

$$8. \quad \frac{x^{-2}}{x^3} =$$

$$9. \quad 2x^2y^4 + 8x^2y^4 =$$

$$10. \quad (2x^2y^3)^4 + (3x^4y^6)^2 =$$

$$11. \quad \frac{(x+y)^3}{(x+y)^2} =$$

$$12. \quad \left(\frac{3m^2n^7}{m} \right)^0 =$$

1.4 Multiplying, Factoring & Solving Polynomials

$$1. \quad \text{Multiply } (x-5)^2$$

$$2. \quad \text{Multiply } (x+4)(x-4)$$

$$3. \quad \text{Multiply } (2x+5)(4x-3)$$

$$4. \quad \text{Factor } x^2 - 9x$$

$$5. \quad \text{Factor } 8x^2 + 14x - 15$$

$$6. \quad \text{Factor } 2x^2 + 10x - 28$$

7. Solve $x(x-8)=0$

8. Solve $(x+2)(x-5)=0$

9. Solve $(2x-5)(4x+3)=0$

10. Solve $x^2-5x-14=0$

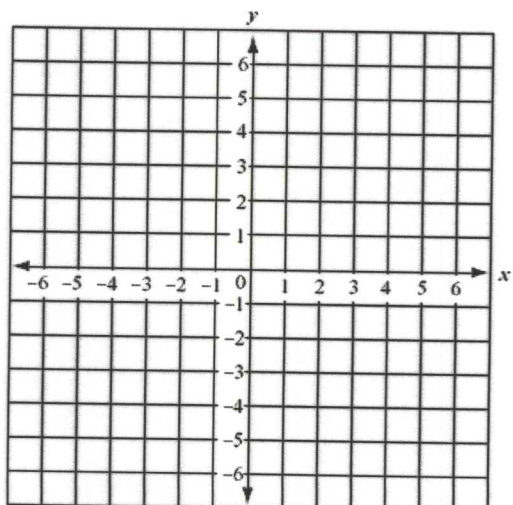
11. Solve $x^2-25=0$

12. Solve $6x^2+23x+20=0$

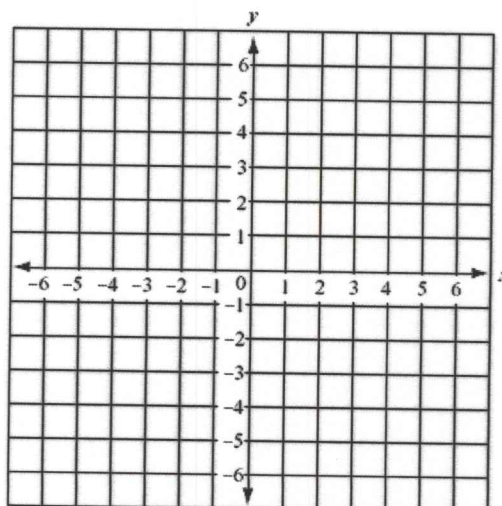
1.5 Quadratic Functions

Graph each parabola with the given quadratic equation

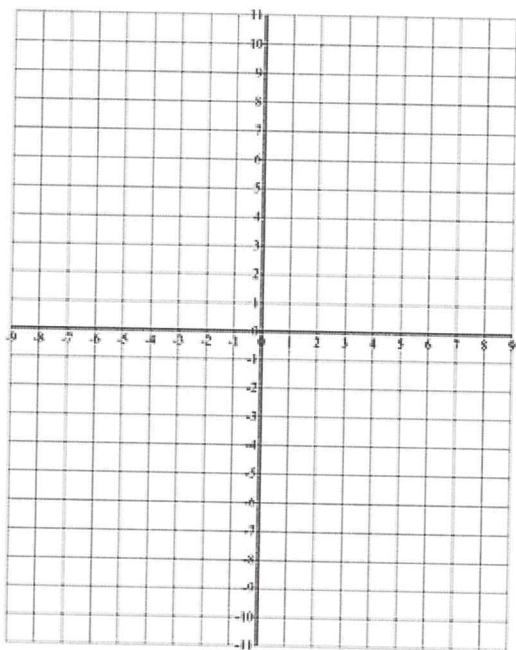
1. $f(x)=(x-1)^2-4$



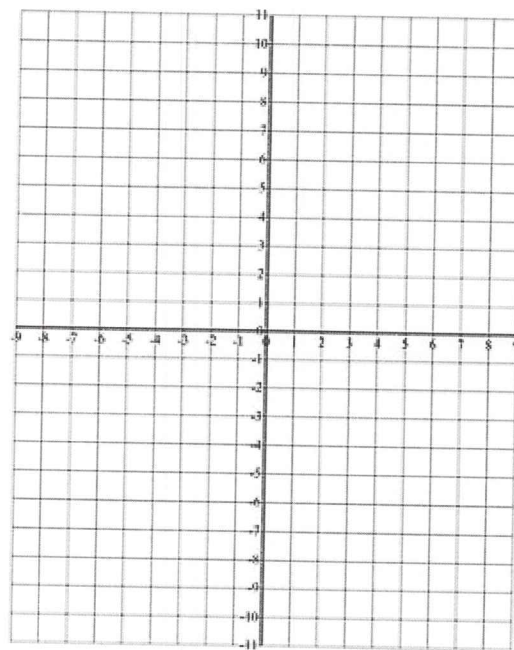
2. $f(x)=x^2+6x+5$



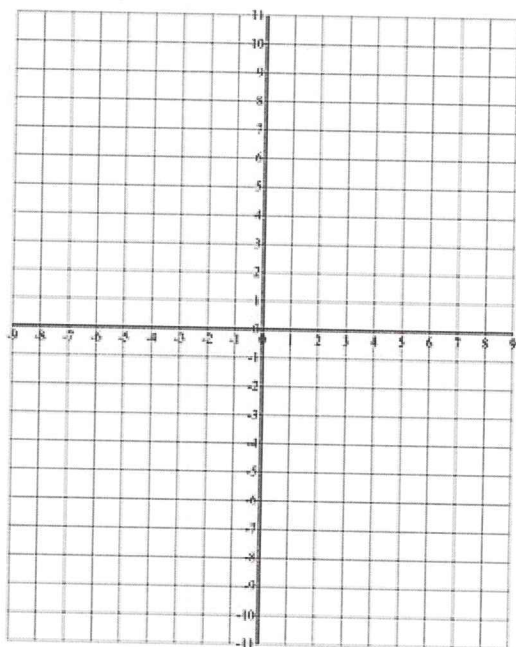
3. $f(x) = x^2 - 6x$



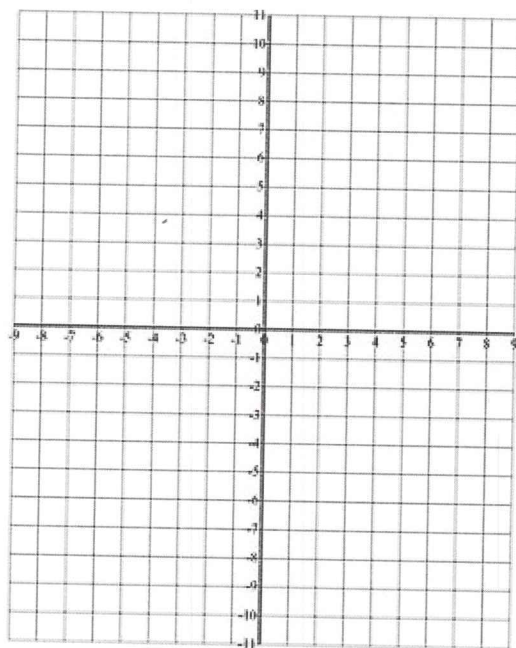
4. $f(x) = -x^2 + 9$



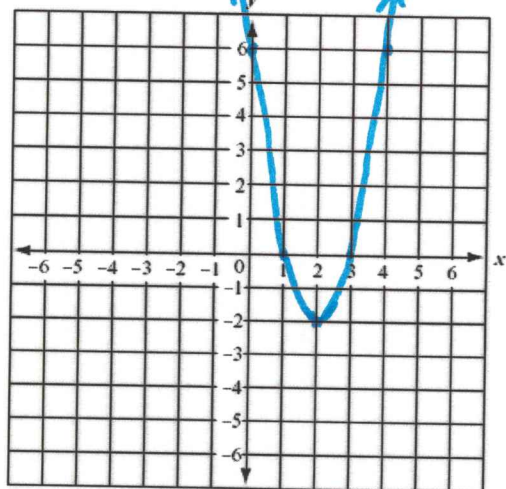
7. $f(x) = 2x^2 + 8x + 10$



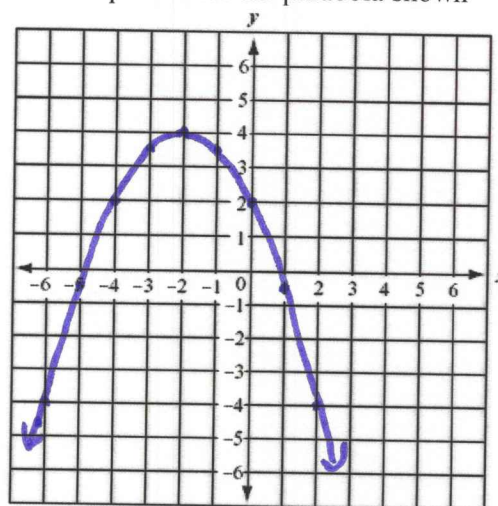
6. $f(x) = (x - 2)(x + 4)$



7. Write an equation for the parabola shown



8. Write an equation for the parabola shown



9. Write a vertex-form equation of the parabola with vertex $V(1, 10)$ and point $P(4, 7)$

10. Write a quadratic equation in factored form given the information. A parabola contains the points $(-2, 0)$, $(5, 0)$ & $(1, -24)$

11. Convert the quadratic equation $f(x) = x^2 + 6x + 10$ to vertex form

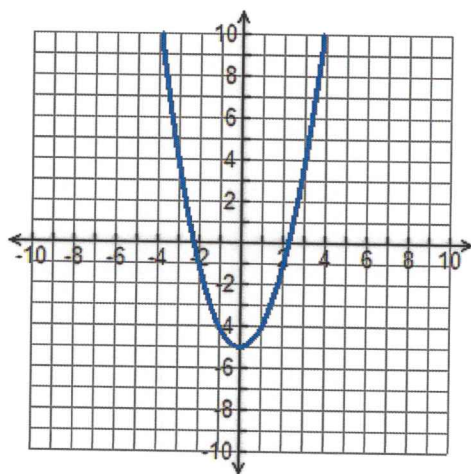
12. Convert the quadratic function $f(x) = \frac{1}{2}(x + 4)^2 + 3$ to standard form

13. Convert the quadratic function $f(x) = (x+1)^2 - 9$ to factored form

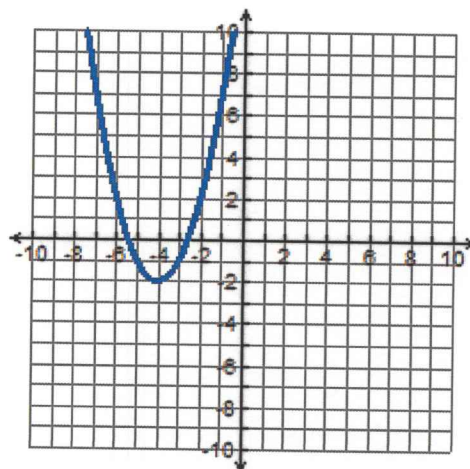
14. Without graphing, determine the x-intercepts of the parabola with equation $f(x) = 2x^2 + 4x - 6$

15. For each parabola shown, write a quadratic equation in the form of your choice.

a.



b.



16. Determine the x-intercepts of the parabola with equation $g(x) = x^2 - 11x + 24$

17. Determine the x-intercepts of the parabola with equation $f(x) = 2x^2 - 9x - 18$